UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,414	01/30/2002	Hironobu Murase	4296-146 US	2128

7590 03/11/2003

Diane Dunn McKay
Mathews Collins Shepherd & Gould
Suite 306
100 Thanet Circle
Princeton, NJ 08540

EXAMINER	
MCINTOSH III, TRAVISS C	

ART UNIT	PAPER NUMBER
1623	9

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

File Copy

Office Action Summary	Application No.	Applicant(s)	
	09/937,414	MURASE ET AL.	
	Examiner	Art Unit	
	Traviss C McIntosh	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 September 1857* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Detailed Action

Receipt is acknowledged of the preliminary amendment filed September 26, 2001 which affects the instant application by:

Claims 3, 4, and 6 have been amended to remove the improper multiple dependency.

Receipt is acknowledged of the supplemental preliminary amendment filed December 27, 2001 which affects the instant application by:

New claims 7-21 have been entered.

An action on the merits of claims 1-21 is contained herein below.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

Receipt is acknowledged of the Information Disclosure Statement filed and the references have been taken into consideration in light of the portion which was provided in English.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

OK Canceled claims

harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 6 of U.S. Patent No. 5,478,812 ('812). Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant application and '812 are drawn to chromanol glycosides and their use.

Claims 1 and 2 of the instant application and claim 1 of '812 are drawn to the identical chromanol glycoside, with the same core structure, wherein the only difference is the alkane group of the instant $(CH_2)_n$ is defined wherein n is 0-6 and '812 defines n as 0-4. The mere extension of the alkane chain is an obvious variation and one of ordinary skill in the art would expect the compounds with the same core structure and same functional groups to react in a manner which is coextensively inclusive with one another and that these compounds are substantially overlapping. Additionally, dependent claim 2 merely recites independent compounds which have various sugars attached, wherein the sugar provides a means for providing solubility in water, and not in effecting the efficacy of the compounds treatment capabilities.

Dependent claims 3 and 6 of the instant application provide limitations wherein the chromanol glycoside is incorporated in an aqueous pharmaceutical preparation or a cosmetic

preparation. Claim 6 of '812 provides the limitation wherein an additional agent is added to the chromanol glycoside, being water, alcohol, or a buffer solution. It would be obvious to one of ordinary skill in the art that by incorporating water, alcohol, or a buffer to the chromanol glycoside, you would obtain an aqueous preparation which could then be used as a cosmetic, topical, spray, etc.

Claim Objections

Claims 4 and 5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims incorporate a limitation intended to indicate how the claimed compounds are intended to be used. It is well established that the intended use of a compound is afforded little to no patentable import in compound claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-13 and 18-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant disclosure is not seen to be sufficient to enable the use of the chromanol glycoside of formula 1 to **prevent and cure dermopathy, to prevent and cure any disorder caused by ultraviolet light, and prevent the senescence of skin** without undue experimentation

Undue experimentation is a conclusion reached by weighing the noted factual considerations set forth below as seen in ***In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)***. A conclusion of lack of enablement means that, based on the evidence regarding a fair evaluation of an appropriate combination of the factors below, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation.

These factors include:
(A) The breadth of the claims;
(B) The nature of the invention;
(C) The state of the prior art;
(D) The level of one of ordinary skill;
(E) The level of predictability in the art;
(F) The amount of direction provided by the inventor;
(G) The existence of working examples; and
(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The breadth of the claims – The nature of the invention

Claim 10 of the instant application is drawn to a method of preventing and curing dermopathy, which reads on any disease of the skin, i.e. cancer. Claim 12 is drawn to a method of preventing and curing a disorder caused by ultraviolet light, which reads on skin cancer. Claim 18 is drawn to a method of preventing the senescence of skin, which reads on preventing skin from dying.

The state of the prior art

Chromanol glycosides are known in the art to be useful as hypoglycemic agents in treating diabetes and diabetic complications as seen in JP-01-305,097, and also to be useful as pH stabilizers, antioxidants, radiation protecting agents, and for treating inflammatory intestinal diseases as seen in JP-11-279,192. At present, there are no known agents capable of preventing and curing dermopathy, preventing and curing cancer, and preventing the senescence of skin.

The level of predictability in the art

The examiner acknowledges the probability and predictability that the active agent, which is a chromanol glycoside, has efficacy in treating certain conditions associated with various skin conditions, however the art is silent with regard to the predictability of effectively preventing the development of cancer and the senescence of skin by administering the chromanol glycoside as the active agent.

The amount of direction provided by the inventor

The instant specification is not seen to provide adequate guidance which would allow the skilled artisan to extrapolate from the disclosure and examples provided to use the claimed method commensurate in the scope with the instant claims. There is a lack of data and examples which adequately represent the scope of claims as written. The examiner notes, there has not been provided sufficient instruction or sufficient methodological procedures to support the alleged efficacies instantly asserted.

The existence of working examples

The working examples set forth in the instant specification are directed to various tests involving ultraviolet light (UVB) on fibroblasts to determine survival ratios, cornified cells to determine the repression of IL-1α production, on the backs of shaved guinea pigs to determine

pigment sedimentation, and on fibroblasts for determining cell growth/replication. The results show that the survival/prevention/curing percentage was not 100% in any instance (see tables).

There has not been provided sufficient evidence which would warrant the skilled artisan in oncology, to accept the data and information provided in the working examples as correlative proof that a healthy individual would never become afflicted with or be effectively cured from any dermopathy, any disorder caused by ultraviolet light, and prevent the senescence of skin if subjected to the instantly claimed therapy.

The quantity of experimentation needed to make and use the invention based on the content of the disclosure

Indeed, in view of the information set forth supra, the instant disclosure is not seen to be sufficient to enable the use of the chromanol glycoside claimed to prevent and cure dermopathy, prevent and cure cancer, or prevent the senescence of skin without undue experimentation. One skilled in the art could not use the entire scope of the claimed invention without undue experimentation.

Reasonable guidance with respect to prevention and curing of any skin condition, any disorder caused by ultraviolet light (cancer) , and the senescence of skin relies on quantitative analysis from defined populations which have been successfully pre-screened and are predisposed to particular types of the conditions. This type of data might be derived from widespread genetic analysis, cancer clusters, or family histories. The essential element towards the validation of a preventive therapeutic or cure relies on the ability to test the drug on subjects monitored in advance of clinical conditions and *link* those results with subsequent histological confirmation of the presence or absence of disease. This irrefutable link between antecedent

drug treatment and subsequent knowledge of the prevention of the disease is the essence of verification of a valid preventive agent.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 10, 12, 14, 16, 18, and 20 are indefinite wherein the inclusion of parenthetical phrases leaves ambiguity and uncertainty as to whether the contents inside the parenthesis are intended as being that which applicant intends as their invention. Clarity is respectfully requested. Removal of parentheses will obviate this rejection.

Claims 1, 10, 12, 14, 16, 18, and 20 are indefinite where the claims recite "X represents a monosaccharic residue or an oligosaccharic residue optionally having the hydrogen atom... in the saccharic residue substituted". It is unclear whether the hydrogen atom is optionally substituted in a monosaccharic residue or an oligosaccharic residue, or whether the hydrogen atom only in the oligosaccharic residue is substituted. Additionally, X in formula does not equal x in description. In claims 10, 12, 14, 16, 18, and 20 the variable X is not seen to be consistent with the variable x. X is seen in formula 1, x is set forth in the description. Please reconcile formula and description.

OK

Claim 7 is indefinite wherein the claim reads: "a method of preventing and treating a mammal which can comprise administering thereto an effective amount of the agent of claim 1".

OK

The claim is indefinite as there is nothing claimed which is to be prevented or treated. Is the claim drawn to preventing and treating any disease and disorder? Clarity is respectfully requested. Additionally, the claim is indefinite wherein the claim reads "which **can** comprise". This recitation leaves uncertainty as to whether this step is necessary. The claim should be written so all steps which are to be taken are written in a definite and positive manner. Additionally, the term "effective amount" is indefinite where the claim fails to state the function which is to be rendered effective. **In re Frederiksen, 102 USPQ 35 (CCPA 1954).**

Claim 14 is indefinite wherein the claim is drawn to a method of "preventing and allowing the deposition of pigment in the skin". It is unclear how the method can both prevent and allow for pigment to be deposited in the skin. Clarity is respectfully requested.

OK now add a 1 112 1st

Claim 16 is indefinite wherein the claim is drawn to a method of "beautifying the skin in white". It is unclear what applicant intends by this phrase. To what level of beauty is intended? To whose guidelines is beauty to be interpreted? Does applicant intend for this to be a method of whitening skin, or beautifying the skin by removing wrinkles or scars or unwanted hair? Clarity is respectfully requested.

Claim 20 is indefinite wherein the claim is drawn to a method of "activating cells in a mammal". It is unclear what is meant by "activating cells". Clarity is respectfully requested.

All claims which depend from an indefinite claim are also indefinite. ***Ex parte Cordova, 10 U.S.P.Q. 2d 1949, 1952 (P.T.O. Bd. App. 1989).***

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Murase et al. (US Patent 5,478,812).

The portion of claim 1 wherein n is 0-4 is anticipated by Murase et al. Every limitation in the compound as claimed in claim 1 of the instant application is disclosed by the compound as taught by Murase et al. other than when n is 5 or 6.

The compound must contain new and patentable differences over the prior art compound to be patentably distinct and when n is 0-4, the instant compounds are anticipated by the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

> Determining the scope and contents of the prior art.
> Ascertaining the differences between the prior art and the claims at issue.
> Resolving the level of ordinary skill in the pertinent art.
> Considering objective evidence present in the application indicating obviousness or nonobviousness.

Applicant has provided evidence in this file showing that the invention was owned by, or subject to an obligation of assignment to, the same entity as US Patent 5,478,812 at the time this invention was made. Accordingly, 5,478,812 is disqualified as prior art through 35 U.S.C. 102(e), (f) or (g) in any rejection under 35 U.S.C. 103(a) in this application. However, this applied art additionally qualifies as prior art under another subsection of 35 U.S.C. 102 and accordingly is not disqualified as prior art under 35 U.S.C. 103(a).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the inventor of this application, and is therefore, not the invention "by another", or by antedating the applied art under 37 CFR 1.131.

Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murase et al., U.S. Patent No. 5,478,812 ('812).

Claims 1 and 2 of the instant application and claim 1 of '812 are drawn to the identical chromanol glycoside, with the same core structure, wherein the only difference is the alkane group of the instant $(CH_2)_n$ is defined wherein n is 0-6 and '812 defines n as 0-4. The mere extension of the alkane chain is an obvious variation and one of ordinary skill in the art would

expect the compounds with the same core structure and same functional groups to react in a manner which is coextensively inclusive with one another and that these compounds are substantially overlapping. Additionally, dependent claim 2 merely recites independent compounds which have various sugars attached, wherein the sugar provides a means for providing solubility in water and for improving biologically active substances in behavior and quality, and not in effecting the efficacy of the compounds treatment capabilities (column 3, lines 6-17).

Dependent claims 3 and 6 of the instant application provide limitations wherein the chromanol glycoside is incorporated in an aqueous pharmaceutical preparation or a cosmetic preparation. Murase et al. teach that their chromanol glycoside is highly effective in an aqueous solution and that the antioxidant properties proves highly useful as a raw material for cosmetic articles, articles for dress, foodstuffs, and articles of formation, etc. (Column 3, lines 18-25).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Traviss McIntosh whose telephone number is 703-308-9479. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 703-308-4624. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

James O. Wilson
Supervisory Patent Examiner
Art Unit 1623

Traviss C. McIntosh
March 10, 2003